

Written Testimony of
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UNITED STATES PATENT & TRADEMARK OFFICE
(USPTO)

Pursuant to the
Study of Underrepresented Classes
Chasing Engineering and Science Success
(SUCCESS) Act of 2018

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Coupling Equal Opportunity with Equal Outcome:

The Necessary Two-Pronged Approach for Promoting the Participation
of Underrepresented Classes both in Entrepreneurship and in the
Pursuit of the U.S. Patent Bargain

by

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*"The SUCCESS Act instructed the USPTO to ... report to Congress on
recommendations for promoting the participation of women,
minorities, and veterans both in entrepreneurship and in applying
and obtaining patents. **I look forward to receiving that report and
its recommendations.**"*

— U.S. Representative Martha Roby

March 27, 2019, House Judiciary Committee Hearing,

*Lost Einsteins: Lack of Diversity in Patent Inventorship and the Impact of America's
Innovation Economy*

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Prologue

On May 8, 2019, I, Jeff Hardin, and my wife, Patricia Duran, provided oral testimony at the USPTO in one of three hearings for public comments pursuant to the SUCCESS Act.^{1,2}

My wife began her testimony noting her status as a minority, while providing her testimony in Spanish with me translating.³ Her speech questioned the benefit of a patent if one is not able to defend it, and she provided rationale to expand the definition of the underrepresented class as defined by the SUCCESS Act to additionally include the class of independent inventors and small businesses owned by those inventors. Note that it is this expanded definition I will use for “underrepresented” in this written testimony throughout. She then shared her personal story of battling cancer and misdiagnosis, showing the need for continued innovation in the field of diagnosis methods.

I followed my wife’s lead, providing legislative recommendations for the USPTO to provide Congress pursuant to the SUCCESS Act. The first legislative recommendation addressed diagnosis methods via Section 101 reform that would also serve to augment the number of women who apply for patents. In the second legislative recommendation, I first identified the problem of the underrepresented class of patent holders that was created by the America Invents Act (AIA)⁴ and recent Supreme Court cases. I posed a key question at the heart of the issue that both the USPTO and Congress must realize:

How do we provide equal outcome so that equal opportunity even presents an incentive worth pursuing?

I then provided a legislative solution to address that problem, restoring patent rights for the underrepresented class of inventors.

My oral testimony I provided on May 8 served to provide only one part of what I consider a two-pronged approach to the task the USPTO has before it in lieu of providing legislative recommendations to Congress pursuant to the Act. In this written testimony, I summarize my oral testimony while completing the two-pronged approach: coupling equal opportunity with equal outcome.

Furthermore, following the oral testimony on May 8, I have met with various members of Congress, including those of the House Judiciary Subcommittee on Courts, IP, and the Internet, discussing legislation strategies in pursuit of this two-pronged approach: providing equal opportunity to underrepresented classes as well as equal outcome to the underrepresented patent holder.

¹ <https://www.uspto.gov/about-us/events/provide-comments-first-public-hearing-success-act>

² <https://www.youtube.com/watch?v=2fF7d9iOKm4>

³ See Attachment 2.

⁴ 35 U.S.C. § 100 (2012) (Leahy-Smith America Invents Act (AIA) of 2011).

Executive Summary

One thing at stake in the pursuit to increase entrepreneurship and patenting among underrepresented classes is providing a system of equal opportunity for the future innovators of America. By working to address the gap in the number of patents applied for and obtained by underrepresented classes, the United States seeks to maximize the innovative potential of the American people, promoting the United States leadership in the global economy.

The primary advantage of patenting is that it is rooted in meritocracy. The U.S. Patent System was designed at the outset to be the true anti-monopoly and equal opportunity engine, as innovation, effort, and achievement supersede any demographic or financial factors possessed by an inventor. For this reason, today there is still no requirement for the USPTO to collect information regarding race, gender, age, or any financial information from an inventor so that an examiner can proceed with examination on the merits of an inventor's application for a patent grant.

This meritocracy makes the patent system available and open to anyone. Thus, by emphasizing programs that provide education on and exposure to inventing and entrepreneurship for all peoples, while encouraging healthy competition and the sharing of ideas, the United States can foster innovation amongst its citizens and even to those beyond her borders with no limit on its potential.

Most importantly, however, is that the pursuit of equal opportunity must coincide with the pursuit of equal outcome. Therefore, additionally at stake in this pursuit is providing a system of protection for patent holders, particularly those inventors in the underrepresented class. It goes without saying that without one's ability to utilize or enforce a U.S.-granted patent once received, regardless of the patent holders' financial state, the incentive to pursue even entering the patent bargain with the United States government becomes lost.

Unfortunately, as a result of the AIA of 2011 and various court decisions over the past two decades, the ability for a patent holder to utilize or enforce a granted patent issued by the United States government today has plummeted. The result to the American economy is that the "reliability" of an issued patent that once existed now has become a meaningless asset for investment. Only until after a patent undergoes the gauntlet of post grant review proceedings can a patent be said to have any value for investment, and yet, even if this patent is fortunate enough to survive a post grant review, the "reliability" is never fully settled due to being subject to gang tackling, serial attacks, and business models such as those that use surrogates to challenge patents without having time bar limitations. Moreover, the exorbitant costs in defending patent challenges at the Patent Office are at the expense of the patent holder, serving as a major deterrent in why one should pursue a patent. In fact, for the inventor who holds a patent of value in the market but who cannot afford representation for a post grant review proceeding challenge, ironically possessing such a patent today has become a risk, as anyone can challenge the patent, despite that it has already been vetted by expert examiners in the field, and can drag the inventor into a costly proceeding. This ironically defeats the intent of Patent Clause to promote and encourage innovation.

Thus, the pursuit of equal opportunity for the underrepresented inventor must coincide with correcting equal outcome in the inventor's ability to enforce and utilize a granted patent on issuance, regardless of the inventor's financial state. Accordingly, the AIA "second look experiment" that was created by Congress to address a patent trolling narrative preached by entities who would prefer to infringe an issued patent rather than license it must be revisited. The Honorable Andrei Iancu, Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office, warned in a speech in 2018 that "we have over-corrected and risk throwing out the baby with the bathwater. This must now end, and we must restore balance to our system."⁵ We submit that this baby is the underrepresented inventor and show that it has already been thrown out. Fortunately, our laws are by the People, and our elected Congress itself is seeking solutions. Today, they are asking the Patent Office for legislative recommendations. This written testimony includes legislative proposals for the Patent Office to recommend to Congress.

The testimonies provided by my wife and me serve to provide solutions to both prongs—equal opportunity and equal outcome—in the required two-pronged approach to adequately promote the participation of underrepresented classes both in entrepreneurship and in the pursuit of the U.S. patent bargain.

⁵ <https://www.ipwatchdog.com/2018/10/19/iancu-risk-takers-patent-troll-narrative-orwellian-doublespeak/id=102474/>

Written Statement

I. Introduction

By way of introduction, I am a self-made entrepreneur, software developer, and inventor. I currently oversee an information technology consulting firm I co-founded in 2002, and, over the course of the last decade, I have developed and pursued patents for inventions related to software, cloud, and mobile device platform technologies on a *Pro Se* basis, resulting in 7 patent grants with others pending. I am an active member of the Houston Inventors Association, have advised judges at the Young Inventors Showcase of Houston, and sit on the advisory board for the Inventor Rights Coalition. Additionally, I have been invited to Washington, D.C. multiple times to meet with members of Congress and IP subcommittee counsel as a result of my recent efforts supporting independent inventors and patent rights.

My wife, Patricia Duran, has over ten years of experience in the areas of compliance, operational risk management, and anti-money laundering, having vast work experience throughout Latin America. Prior to moving to the United States, Patricia served as independent advisor to the vice presidency of the 2nd largest bank in the Dominican Republic, while additionally serving in the capacities of anti-money laundering department lead, compliance analyst, and spokeswoman for the institution. Patricia has elected to keep her innovations, particularly those related to payment systems, as trade secrets due to the state of the U.S. Patent System, which goes against the American spirit of promoting the Useful Arts by public disclosure.

Patricia and I first met when I served as an ambassador to the Dominican Republic as part of Rotary International's Group Study Exchange program. We married 15 months later and will celebrate 10 years of marriage this year. We have two children, ages three and four years.

A major turning point occurred in our lives between the months of February to May in 2016, as each of these events happened in sequence: Patricia underwent a C-section; my father received a lung transplant and was under recovery; my mother became bedridden with a crushed vertebrae, pelvis, and hand from a falling accident; Patricia's mother suffered a heart attack and contracted sepsis while in the hospital; and Patricia was then diagnosed with breast cancer, requiring mastectomy, chemotherapy, and radiation. Trying to manage this with an 18-month old and infant was when our plans came to a complete halt; the only thing that mattered was survival.

Adding insult to injury, Patricia suffered misdiagnosis during her treatment, resulting in irrecoverable surgical failures. To me, this demands innovation, yet all the while, I watched at a distance while my existing patent rights began to fade away due to Supreme Court decisions and the effects of Congressional policy. This was when I decided to take an active stance as a citizen and patent holder, addressing and speaking with U.S. government leaders regarding patent rights.

Ms. Duran and I do not speak for any other company or entity or colleague. Our views are strictly independent of others' opinions on policy, and we have not discussed our testimony with any companies or entities before submission, except that between ourselves.

II. Underrepresentation in Outcome

"Thanks to the passage of the SUCCESS Act, the USPTO is following up on this report with further research on underrepresentation... *Fully understanding the contours of underrepresentation is an important step in designing policy* that can ensure that as a nation we are not leaving potential inventors behind and groundbreaking innovations undiscovered."

— U.S. Representative Hank Johnson, Chair of the U.S. House Subcommittee on Courts, Intellectual Property, and the Internet^{6,7}

On May 9, 2019, the day after I provided oral testimony at the USPTO, I attended the Oversight of the U.S. Patent and Trademark Office hearing by the U.S. House Subcommittee on Courts, Intellectual Property, and the Internet, where I heard Representative Hank Johnson speak those very words above. My comments here seek to provide the USPTO a fuller understanding how there is underrepresentation in outcome among independent inventors who hold patents.

The Honorable Andrei Iancu, Director of the USPTO, sat as witness to the USPTO Oversight hearing. Laura Peter, Deputy Under Secretary of Commerce for Intellectual Property and Deputy Director of the USPTO, was present with Director Iancu. Ms. Peter spoke the previous day at the first of three hearings for public comments pursuant to the USPTO's study on SUCCESS Act, where my family was also present, and my wife and I spoke. So, following the USPTO Oversight hearing, I found it appropriate to introduce myself to Ms. Peter, where I thanked her for allowing my wife and me the opportunity to provide our testimonies. In this conversation with Ms. Peter, I expressed my concerns with post grant review proceedings and my preference towards an Article III court, to which Ms. Peter asked: "What can you *not* get at the PTAB that you *can* get in an Article III court?"

It's a simple question, really, and in fact, I was asked this question earlier in the week in a meeting with a staff member of the House Judiciary Subcommittee on Courts, IP, and the Internet, and he indeed saw my point. As such, I elected to address this question and make it part of my oral testimony I provided to the USPTO on May 8. Simply put, using this question as justification for post grant review proceedings alone incorrectly focuses on the ends and not the means, falling victim to the fallacy of expediency,

⁶ <https://judiciary.house.gov/legislation/hearings/oversight-us-patent-and-trademark-office>

⁷ https://www.youtube.com/watch?v=Y-XyuoRZ_Fs

defined as “ignoring every aspect of a means other than its capacity to achieve a desired end.” In other words, it doesn't matter how we get there; just as long as we got there.

In fact, in his dissent in *Oil States Energy Services, LLC v. Greene's Energy Group, LLC*⁸, Supreme Court Justice Gorsuch emphasized the problem of expediency in the AIA:

Today, the government invites us to retreat from the promise of judicial independence. Until recently, most everyone considered an issued patent a personal right—no less than a home or farm—that the federal government could revoke only with the concurrence of independent judges. But in the statute before us Congress has tapped an executive agency, the Patent Trial and Appeal Board, for the job. Supporters say this is a good thing because the Patent Office issues too many low quality patents; allowing a subdivision of that office to clean up problems after the fact, they assure us, promises an efficient solution. And, no doubt, dispensing with constitutionally prescribed procedures is often expedient. Whether it is the guarantee of a warrant before a search, a jury trial before a conviction—or, yes, a judicial hearing before a property interest is stripped away—the Constitution's constraints can slow things down. ... No doubt this efficient scheme is well intended. But can there be any doubt that it also represents a retreat from the promise of judicial independence? Or that when an independent Judiciary gives ground to bureaucrats in the adjudication of cases, the losers will often prove the unpopular and vulnerable? Powerful interests are capable of amassing armies of lobbyists and lawyers to influence (and even capture) politically accountable bureaucracies. But what about everyone else?

In answering the very question in my May 8 speech that was subsequently posed by Ms. Peter, I identified but ignored addressing the many differences impacting all stakeholders facing a validity challenge, some of those being the very things Justice Gorsuch expressed as concerning: not having a stacked panel, the benefits of having an impartial judge, a jury, full discovery, a presumption of validity, etc. Rather, I focused on the single difference that matters most to the underrepresented class, and I summarized it in one word: *Representation*. In fact, the very word “representation” is at the root of “underrepresented”, which is very thing Congress is trying to address in their Study of *Underrepresented Classes Chasing Engineering and Science Success* (SUCCESS) Act.

I provided how this very thing—representation—is where the imbalance lies between the represented and underrepresented classes that Congress unintentionally created with the AIA. Without it, no underrepresented inventor can even make it on the field to play the sport, and none of the other concerns even matter.

I emphasized that no patent practitioner or attorney will take a PTAB challenge on a contingency arrangement, as there are no monetary damages on the prospect of success at the PTAB. This cost is on the inventor's dime. As a result of the AIA, just trying to reach the same state of reliance that previously

⁸ 138 S. Ct. 1365 (2018).

existed on the day a patent was granted before the AIA went into effect is now the financial burden of the patent holder, and these extra costs are post grant and after issuance—costs that are not anticipated by an inventor, as the patent has already been vigorously vetted by expert examiners at the USPTO.

As an aside, what I did not mention in my speech due to time constraints is the fact that no inventor holding a patent having a priority date *before* the AIA went into effect ever agreed to this new AIA-created patent bargain with the government when she disclosed her invention to the government and the public. As such, earlier this year in March, I drove to Austin, Texas so I could witness a fireside chat with USPTO Director Iancu as guest at SxSW⁹, hoping for an opportunity to arise during a potential Q&A so that I could ask the Director if he found it fair that no inventor who entered into the patent bargain and disclosed her invention to the public prior to the AIA subscribed to the substantial rule changes that were retroactively applied by the AIA to patents having priority dates that predated the law. I did in fact get that opportunity and asked that question, and I reminded Director Iancu that he has the power to deny institution of an IPR, and I asked whether he would consider first his oath to defend and support the Constitution—in which the Takings, Due Process, and Ex Post Facto Clauses are immediately present—as a way to protect the patent grant on which the inventors who never entered into the AIA “patent bargain” so dearly rely.

Director Iancu’s response was that a) *Oil States* did not address the issue of retroactivity, b) this issue was currently being litigated so he could not speak on it, and c) that as an agency, the USPTO must execute the law that is on the books. I did meet Director Iancu afterwards and thanked him for taking my question. However, others in the crowd told me he didn’t answer it, and given that the power to deny institution of an IPR does indeed reside with the Director, and under 35 U.S.C. § 326(b), “in prescribing regulations under this section, the Director shall consider the effect of any such regulation on the economy [and] the integrity of the patent system,” perhaps they were correct. Does changing the patent bargain during the term of the social contract provide reliance to the economy? Does changing the patent bargain during the term of the social contract exhibit or uphold integrity in the patent system?

Now, regarding these newly introduced costs to patent holders, I provided in my May 8 oral testimony that, per the *2017 AIPLA Report of the Economic Survey*¹⁰, the estimated mean cost of a post-grant proceeding through appeal runs at \$450,000.00. I showed that this is how much it costs a patent holder for a single post grant proceeding, let alone the problems of gang tackling, parties of interest and privies, conflicts of interest with APJs, serial attacks, and a surrogate-type business model to skirt time bar limitations. Add to that the institution and kill rate statistics on patents challenged at the PTAB, and an underrepresented patent holder has a bleak picture if she desires to utilize her patents and ends up in that tribunal.

So, in other words, if an underrepresented inventor holding a granted patent doesn’t have just shy of half a million dollars to spare for a single patent challenge at the USPTO, she will not find

⁹ <https://www.ipwatchdog.com/2019/03/20/cta-preaches-patent-troll-fairy-tale-chat-iancu-sxsw/id=107539/>

¹⁰ <https://www.aipla.org/detail/journal-issue/economic-survey-2017>

representation if she ever wants to license her patent and someone does the math and challenges it, or if she wants to protect her patent when someone else steals her invention. Is this a fair shake?

This very reality makes the case that a patent does not give underrepresented inventors any reliable benefit, but rather, it gives them an increased risk of receiving a costly validity challenge. Hence, with today's U.S. patent system, the question that arises if the government were to encourage underrepresented groups to get more patents is not "What are you doing for them?", but "What are you getting them into?" It goes without saying that as a result, organizations such as US Inventor now resort to advising their members to keep their inventions trade secrets and not to disclose them to the U.S. government and the public in pursuit of a U.S. patent, lest their inventions easily be disclosed to, and stolen by, the public. The very statute Congress created ironically goes *against* the intent behind the Patent Clause of the Constitution.

This alone is not the only threat to innovation for those hoping that a granted patent will give their invention the protection it needs so they can climb the ladder of success. Recent Supreme Court decisions have also damaged the underrepresented inventor in their pursuit of innovation and entrepreneurship.

The previously mentioned *Oil States*¹¹ case re-emphasized that a patent is no longer a private property right, but a public franchise. The Court majority did conclude that it is the prerogative of Congress to create such a patent system in the name of "efficiency", but this does not mean that this provides the best patent system for the underrepresented, nor did the Court put their stamp of approval on that as the best system. In fact, it is evident Congress is aware of this, as in this very SUCCESS Act, Congress is seeking legislative recommendations to help serve underrepresented classes. Evidence of the Supreme Court's disapproval is seen throughout the *Oil States* oral argument¹², as many justices expressed their concerns that the same branch of government who gives can also take away, and that the process and rules changed dramatically. As further evidence of their discomfort in what the AIA created, Supreme Court Justice Sotomayor said later in the oral argument of *Return Mail, Inc. v. Postal Service*¹³ (2019):

It does seem like the deck is stacked against a private citizen who is dragged into these proceedings. They've got an executive agency acting as judge, with an executive director who can pick the judges, who can substitute judges, can reexamine what those judges say, and change the ruling...

What is important to note is that Justice Sotomayor did *not* say that the deck is stacked against a woman or a minority or a veteran. She said, "private citizen", reinforcing the concept that the patent system is designed as a meritocracy, as previously explained.

¹¹ 138 S. Ct. 1365 (2018).

¹² https://www.supremecourt.gov/oral_arguments/argument_transcripts/2017/16-712_7kh7.pdf

¹³ https://www.supremecourt.gov/oral_arguments/argument_transcripts/2018/17-1594_1an2.pdf

Another Supreme Court case to the detriment of inventors is *TC Heartland LLC v. Kraft Foods Group Brands LLC*¹⁴, where residency was defined as the state of incorporation for a company. This means that inventors wishing to enforce their rights against an infringer must halt their inventing, leave their labs, and traverse the United States to district courts in states where infringers are incorporated or where they performed acts of infringement. Not only does this present another financial burden toward the underrepresented inventor, but this yanks her out of her lab and garage where she is performing her best innovative work and forces her to travel to distant courts across the United States in an effort to enforce her granted patent rights.

Furthermore, the Supreme Court in *eBay Inc. v. MercExchange, L.L.C.*¹⁵ makes the very text on the face of every printed patent a false promise, as the “person(s) having title to [a] patent” does *not* have “the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention in to the United States of America” against larger companies. So, for example, if an inventor invents a better way to ship products and obtains a patent for it, and suppose a company like Amazon decides it wants to take the patented invention and use it, it can do exactly that, and the inventor is compelled to license the patent at a price determined by a court, nevermind, if she wants to be the exclusive entity to utilize the patent and bring competition to the market.

Each of these issues—the *America Invents Act* and how it created the underrepresented inventor; *TC Heartland* and the loss of a convenient venue for the underrepresented inventor; *eBay* and the loss of the exclusive right, stripping the ability for inventors to compete—represent real challenges in the plight of today’s inventor. Consequently, independent inventors and small businesses owned by those inventors can no longer expect a granted United States patent will protect their innovations and allow them to compete in the marketplace against larger, financially-abled entities. This is because an independent inventor becomes underrepresented the very minute she receives her patent grant. There is no equal outcome.

III. The Golden Standard Program Without a Diversity Gap

Notwithstanding the difficulties in equal outcome for the underrepresented inventor, we must recognize research received by the U.S. House Subcommittee on Courts, Intellectual Property, and the Internet. As Chair of the Subcommittee and U.S. Representative Hank Johnson stated on May 9 at the aforementioned USPTO Oversight hearing, “[W]e are falling behind in [creating and encouraging the next

¹⁴ 137 S. Ct. 1514 (2017).

¹⁵ 126 S. Ct. 1837 (2006).

generation of innovators] because our patent system demonstrates a lack of diversity in who is getting patents.”^{16,17}

Turning to Chair of the Judiciary Committee and U.S. Representative Jerrold Nadler’s statement in the hearing “Lost Einsteins: Lack of Diversity in Patent Inventorship and the Impact of America’s Innovation Economy”, held on March 27, 2019, we learn:

With so much of our economy dependent on IP-related industries, it is critical that everyone share the economic opportunities these industries offer. Promoting greater inclusion in the innovation ecosystem is good for our economy, good for underserved communities, and good for all Americans. Unfortunately, research shows that many segments of our society continue to be underrepresented as inventors on patents.

The USPTO’s recent report on gender diversity finds that women are very much underrepresented as patent holders. Analyzing data on U.S. patents granted between 1976 and 2016, the report shows that women comprised only 12% of the named inventors on patents in 2016, representing an increase of only 2% over the last 16 years. Clearly, whatever progress is being made is happening far too slowly, and much needs to be done to promote greater gender diversity among inventors. Moreover, the USPTO’s research shows that the underrepresentation in patenting is not solely a function of women entering science and engineering fields at lower rates than men, although that continues to be a problem. In 2015, women comprise nearly 28% of the total science and engineering workforce, but only 12% of inventors’-granted patents. Even where women are in the fields most associated with patenting, they are not patenting at the same rate as their male colleagues. This shows that the gender gap in patenting is likely to be caused by many factors, not just because there are fewer women scientists and engineers.

Unfortunately, because the USPTO does not collect demographic data on inventors, it has been more challenging to study racial and ethnic diversity among U.S. inventors. Nonetheless, the studies that have been done also show significant disparities in patenting rates along racial and ethnic lines.

I hope to learn more from the witnesses about how we can improve data collection on this issue, and learn more about the causes of these disparities, since the first step towards solving the problem is understanding its scope and root causes. For example, one study found that exposure to innovation during childhood has a major impact on an individual’s desire to become an inventor, and a child’s likelihood to becoming an inventor increases if he or she grows up in one of our country’s technology hubs. I am proud that New York City,

¹⁶ <https://judiciary.house.gov/legislation/hearings/oversight-us-patent-and-trademark-office>

¹⁷ https://www.youtube.com/watch?v=Y-XyuoRZ_Fs

where my District is located, counts as one of these hubs, and I hope we can figure out how to replicate this sort of inventive environment elsewhere throughout the United States.^{18,19}

In fact, this study—"Who Becomes an Inventor in America? The Importance of Exposure to Innovation"—presents new evidence on the factors that determine who becomes an inventor. It states:

Most previous work on innovation has focused on factors such as financial incentives, barriers to entry, and STEM education. Our results point to a different channel – exposure to innovation during childhood – as a critical factor that determines who becomes an inventor. A lack of exposure to innovation can help explain why talented children in low-income families, minorities, and women are significantly less likely to become inventors. Importantly, such lack of exposure may screen out not just marginal inventors but the "Einsteins" who produce innovations that have the greatest impacts on society. Policies that increase exposure therefore have the capacity to greatly increase quality-weighted aggregate innovation.²⁰

Accordingly, and in line with the sentiments of Representative Nadler, I find it prudent to identify and focus on a program that a) showcases this type of exposure to innovation during childhood, b) is successful in encouraging inventing and entrepreneurship, c) has evidence of lacking a gap in diversity, and d) has replicative power. In fact, I have personal experience with such a program. Accordingly, I would like to introduce the USPTO to the Young Inventors Showcase, a project and competition of which I was asked to be a judge this year. I personally know the founder of the showcase, Greg Micek, and I strongly advocate this program as the very program that should be replicated throughout the United States.

Interestingly, the Young Inventors Showcase actually spawned indirectly from USPTO activities in Houston, Texas, where the concept for an inventors' association originated. In 1983, the USPTO, pursuant to the Small Business Innovation Development Act of 1982, co-sponsored the University of Houston's Hilton Hotel conference, where more than four hundred attendees were present. The Patent Office specifically requested that an inventors program be started in Houston, and Houston businessman and attorney Greg Micek accepted the mandate. During the next two years, Mr. Micek helped maintain a productive relationship with the USPTO and the University, volunteering the use of his offices for dozens of monthly meetings for local inventors, resulting in the formation of the Houston Inventors Association (HIA)—a Texas non-profit organization. The HIA's mission is to provide education, technical assistance, and support to creative thinkers in the greater Houston area and across the nation. From the beginning, the founders acknowledged the need for high quality educational information for members and the public at large, as well as a priority for outreach to children.

¹⁸ <https://judiciary.house.gov/legislation/hearings/lost-einsteins-lack-diversity-patent-inventorship-and-impact-america-s>

¹⁹ <https://www.youtube.com/watch?v=CCOeRO2NBCw>

²⁰ Bell, A.M., R. Chetty, X. Jaravel, N. Petkova, and J.V. Reenen, 2017. "Who Becomes an Inventor in America? The Importance of Exposure to Innovation". National Bureau of Economic Research Working Paper No. 24062. <https://doi.org/10.3386/w24062>

Shortly thereafter, the Young Inventors Club was started as a subordinate project that reported to the HIA Board and operated under the HIA's 501(c)(3) sanction, and in 2002, the non-profit project grew into its own organization—the Young Inventors Association of America (YIAA).

The Young Inventors Showcase is an annual competition held by the YIAA, and it excels in encouraging and fostering innovation among today's youth and their families. The competition requires that participants identify a problem to solve, solve it, describe and/or demonstrate the solution, and name the invention. Participants learn valuable problem-solving, expression, and presentation skills that they will carry for a lifetime. Meanwhile, while the participants are presenting their skills to the judges, the families of the participants attend sessions in a separate meeting space on entrepreneurship and how to start a family business, including seeking protection via copyrights, trademarks, and patents.

Furthermore, the competition features two categories for winners that tie directly into USPTO activities—"The Most Patentable Invention" and "The Best Trademarkable Name". Also, unique to the Young Inventors Showcase this year, a volunteer patent attorney judged and researched the USPTO database for these categories live during the competition, and the elected winners for these categories receive prosecution and filing fees with the attorney pro bono as part of their prize. I asked this attorney what his motivation was in doing this, and what he told me was astonishing. He shared a story of how when he was in elementary school as a child, his teacher took him into the hallway and told him that he was incredibly gifted, and that he scored at genius levels. He said, "Whether this was true or not, it didn't matter. From that point on, I knew I was intelligent and different, and my life as a result shot upward in a magnificent trajectory that wouldn't have happened otherwise. Look at these kids here. Just the fact that these kids made it here to the finals. They invented something, and they are told they are inventors and they are intelligent. And someone believed in them. Because of that, they have already won in life. It is for this reason I do what I do."

Moreover, the competition clearly demonstrates how innovation is the natural diversity engine. This past competition, over 700 participants entered the competition, and of the seven elected winners, three were female, and three of the four male winners were minorities. As I took a photo of these winners with my smartphone, I was literally in tears as an inner voice deep inside whispered, "And this why you do what *you* do. This is who you are fighting for."

If exposure to innovation during childhood is indeed a critical factor that determines who becomes an inventor, and, given that the Young Inventors Showcase is clearly a program where there is no diversity gap and also sets the next generation of winners on a trajectory of success, the government getting behind programs such as this should be paramount.

As such, I would be happy to meet with the USPTO and Congressional leaders to discuss this program in more detail and how it may be expanded throughout the United States. Furthermore, I have recently spoken with Mr. Micek, and he has also expressed a willingness to meet as well. The Young Inventors Showcase presents the golden standard model of which the USPTO can report to Congress, and with proper government backing and nationwide replication, this very program and policy could close the diversity gap with underrepresented classes when it comes to equal opportunity in the pursuit

of entrepreneurship and the U.S. patent bargain. As the cited study states: "If women, minorities, and children from low-income families were to invent at the same rate as white men from high-income families, there would be four times as many inventors in America as there are today."²¹

IV. Congress & Simultaneous Pursuit: Equal Opportunity + Equal Outcome

At the May 9 USPTO Oversight Hearing, Representative Doug Collins, expressed concern regarding outcome via the USPTO's implementation of IPR proceedings:

Another area of the patent system that requires our attention is the USPTO's implementation of the [] IPR proceedings. ... [Many] argue that the PTO has implemented countless rules skewed against patent owners that result in good patents being struck down in bad IPR decisions. I have heard numerous reports that defendants in litigation are filing multiple similar attacks on the same patent or are using surrogates to skirt prohibitions to repeat attacks. I've also learned that since, in instance, where small businesses sought to assert their patents in federal court to stop the theft of their valuable IP from those thieves, are instead forced to defend themselves their patents before the PTAB, which issued a questionable decision invalidating the patents. Fortunately, some of these small innovative companies could afford to appeal the PTAB's final decision and have their patents restored by the Federal Circuit. But this demonstrates the PTAB proceedings may be used by well-funded companies to harass small businesses in submission. The cost for appealing a bad PTAB decision may be too much for small businesses to bear, resulting in their loss of their patents, innovations, and business at the hands of an unscrupulous copycat. Again, the very thing that we're trying to avoid, we're actually seemingly incentivizing. That's something that we need to look at.^{22,23}

Recognizing these matters within the state of the U.S. Patent System, my wife Patricia Duran stated the following in her oral testimony on May 8 at the USPTO:

[A]lthough pursuing equal opportunity with women, minorities, and veterans in obtaining a patent is a valuable effort, if it does not coincide with equal outcome in one's ability to utilize the patent once received, regardless of the person's financial state, telling women,

²¹ *Id.* at 34.

²² <https://judiciary.house.gov/legislation/hearings/oversight-us-patent-and-trademark-office>

²³ https://www.youtube.com/watch?v=Y-XyuoRZ_Fs

minorities, and veterans that they stand to benefit from a patent will simply be false doctrine.²⁴

Indeed, our current system does not provide equal outcome for an underrepresented inventor once she receives the patent grant. Therefore, if the government wants to encourage the pursuit of more patents among the underrepresented, there needs to exist a worthy incentive in terms of outcome. However, the imbalance in outcome between the underrepresented inventor and the financially-represented business today negates that incentive. So, there must be a simultaneous pursuit towards creating both equal opportunity and creating equal outcome in one's ability to defend a patent once it is issued.

As previously stated, Congress has expressed that they desire to *fully* understand underrepresentation in the U.S. patent system, in terms of equal opportunity as well as equal outcome. In fact, immediately following Representative Johnson statement at the May 9 USPTO Oversight Hearing on this desire, he immediately then directed his concern to the reliability in the resulting patent grant:

A strong patent system requires clear rules, which lead to *reliable patent grants* that attract the investment needed to turn a patentable invention or innovation into a marketable product or service.²⁵

Additionally, Congresswoman Sheila Jackson Lee has expressed explicit interest in the stakeholder feedback that the Patent Office has received from the public as part of its SUCCESS Act study. Recall, in my oral testimony on May 8, I quoted Congresswoman Jackson Lee by looking back to the 2011 Congressional Record where she added her sense of Congress amendment during the debate on the floor. Even then, she expressed great concern on how changes to patent law would affect inventors and small business and their patent rights:

My amendment speaks ... to the vast population of startups and small businesses that are impacted by this legislation. ... This sense of Congress will put us on notice that we need to be careful that we allow at least the opportunity for [] investors, and that we continue to look at the bill to ensure that it responds to this opportunity. ... [M]y amendment also reinforces that we do not wish to engage in any undue taking of property... Small businesses should be as comfortable with going to the Patent Office as our large businesses. ... We must always be mindful of the importance of ensuring that small companies have the same opportunities to innovate and have their inventions patented and that the laws will continue to protect their valuable intellectual property. ... [W]ithout strong patent protection, businesses will lack the incentive to attract customers and contribute to economic growth.²⁶

²⁴ <https://www.youtube.com/watch?v=2fF7d9i0Km4> (See also Attachment 2.)

²⁵ <https://judiciary.house.gov/legislation/hearings/oversight-us-patent-and-trademark-office>

²⁶ <https://www.congress.gov/congressional-record/2011/06/23/house-section/article/H4480-1>

In my testimony on May 8, I asked, “What happened to those investors the Congresswoman mentioned?” I then explained that according to a report from the Alliance for U.S. Startups & Inventors for Jobs (USIJ), in strategic sectors where patent protections are key, venture capital funding has dropped from being 20.95% of total VC funding in 2004 to a mere 3.22% in 2017.²⁷ “The VC money is gone,” I said. I then declared that “now is the time to look at that bill and its consequences—not to lawyers, not to big business, but to the true stakeholders: the American Inventors”.²⁸ So, very fittingly, Congresswoman Jackson Lee today still maintains her interest in looking at the AIA’s consequences and its affect to the underrepresented, as she submitted Questions for the Record²⁹ for the USPTO following the May 9 USPTO Oversight Hearing – questions inquiring about stakeholder feedback, such as:

- Have stakeholders who have provided testimony pursuant to the SUCCESS Act identified any other people(s) as being underrepresented?
- Has the USPTO received stakeholder feedback expressing concern on an underrepresented inventor's ability to financially enforce her patent rights?
- What legislative recommendations has the USPTO received from stakeholders that would increase the incentive for underrepresented classes to apply for and obtain more patents, and does equal outcome with respect to a patent holder's financial ability to enforce their rights against well-funded companies play a part?
- Given that contingency law firms rely on damages to recoup their investment, and in the case of the PTAB, there is no monetary compensation for prevailing patent holders, have stakeholders expressed concern whether the underrepresented classes have the financial means to receive legal representation?
- What legislative recommendations has the USPTO received from stakeholders that would help the underrepresented classes avoid such a financial burden while still achieving the end result of determining patent validity/eligibility?

It goes without saying, clearly Congress is concerned with stakeholder burdens and solutions, both in the pursuit of equal opportunity and in the pursuit of equal outcome. As such, a desire to fully understand the contours of underrepresentation to aid in designing policy, as Representative Hank Johnson put it, is evident.

Now, to aid the USPTO with Congresswoman Jackson Lee’s questions, by way of the oral testimony provided by my wife and me, and of this very written testimony, the Patent Office has indeed received stakeholder feedback clarifying that the underrepresented class includes not only women, minorities, and veterans, but additionally includes independent inventors and small businesses owned by those inventors. The Patent Office has also received stakeholder feedback expressing concern on an independent inventor’s ability to financially enforce her patent rights, that feedback also expressing concerns on the lack of contingency representation at the PTAB. In lieu of legislative recommendations that would increase the incentive for the underrepresented inventor to apply for and obtain more patents, and legislative

²⁷ <https://www.usij.org/research/2018/7/9/us-startup-company-formation-and-venture-capital-funding-trends-2004-to-2017>

²⁸ <https://www.youtube.com/watch?v=2fF7d9i0Km4>

²⁹ See Attachment 1.

recommendations to help the underrepresented inventor avoid the financial burden of the PTAB while still achieving the end result in determining a patent's validity/eligibility, I have provided legislative recommendations that address these questions and more in the following section below.

V. Legislative Recommendations

Pursuant to the SUCCESS Act, the Director of the USPTO is to conduct a study that provides legislative recommendations for how to a) promote the participation of women, minorities, and veterans in entrepreneurship activities, and b) increase the number of women, minorities, and veterans who apply for and obtain patents.

Legislation that would help in the pursuit of **equal opportunity** for underrepresented classes would include:

1. **Women, Minorities & Youth.** Establishing and providing funding from Small Business Innovation Research (SBIR) grants or otherwise to be used to build educational programs that expose our young generation to inventing, programs such as the Young Inventors Showcase, including funds to replicate this model throughout the United States. This falls in line with the study showing that exposure to innovation during childhood leads to higher inventor rates, helping close the diversity gap by focusing on education in and exposure to inventing. Reach could be maximized to all demographics by placing inventing into the public-school system curriculum.
2. **Veterans.** In return for their service to the United States, allowing veterans to enjoy reduced filing fees, and perhaps, fees reduced to an even greater extent than that of a micro entity. This would encourage veterans to partake in innovation with a lower barrier to entry, as well as show our appreciation for their service to our country.
3. **Minorities & Immigrants.** For the purpose of bringing the best minds and the best ideas to the United States, rather than exporting them overseas, upon issuance of a U.S. patent, allowing immigrants who a) are named inventors on the patent, b) have applied for U.S. residency and/or U.S. citizenship status, and c) have satisfied the requirements and do not pose a security risk, to enjoy the benefit of no waiting time to receive their residency/citizenship appointment at USCIS, similar to the benefit received by a spouse of a U.S. citizen seeking the same. Given that the majority of immigrants are minorities by nature, this would help address any diversity issues with regard to those minorities, while encouraging the world's best innovators to contribute in and to American society and commerce. This would also help satisfy the current

concerns of U.S. valuable IP being sought outside the U.S. and in Europe and China, particularly in areas such as 5G, artificial intelligence, and medicine.

It has been shown here that a patent is only valuable if it can be trusted to be reliable and if an underrepresented patent holder enjoys the means to defend it. Recall that the government must simultaneously provide equal outcome in the resulting patent grant so that equal opportunity in the pursuit of the grant even presents an incentive worth pursuing. Accordingly, **simultaneous legislation** that would help provide **equal outcome** for underrepresented inventors who hold patents would include:

4. **Venue Reform.** As a result of *TC Heartland*, an underrepresented inventor who wishes to enforce her patent rights against an infringer does not have a convenient venue to do so. She did nothing wrong, yet now her work on innovation must halt while she spends the additional time and cost to traverse the United States to infringer-friendly district courts to enforce her rights against theft. The solution to this can be found in the proposed Section 1400(b)(4) of S.2733 of the 114th Congress—the Venue Equity and Non-Uniformity Elimination (VENUE) Act of 2016³⁰, legislation that was tabled given that *TC Heartland* was underway. Now the pendulum in full swing in favor of an infringer due to *TC Heartland*, this bill seeks amends Section 1400(b) and contains a provision allowing an infringement action to be brought in judicial districts “where an inventor named on the patent in suit conducted research or development that led to the application for the patent in suit”. This bill would allow an underrepresented patent holder to more conveniently enforce her patent rights in the judicial district where she conducted her research; moreover, this language of this bill does not allow bad actors to participate in forum shopping.
5. **Defining Inventor-Owned Patents and PTAB / Declaratory Judgement Venue Consent.** Underrepresented inventors likely retain ownership of their patents, or assign their patents to a small business they own. Accordingly, Section 100 of 35 U.S.C. shall be amended with the following new subsection: “The term ‘inventor-owned patent’ means a patent held entirely by the inventor(s), or held entirely by a business owned solely by the inventor(s), of the claimed invention.” Once that is established, patent validity challenges petitioned on inventor-owned patents at the USPTO must first be agreed to by the inventor(s); otherwise, said challenges will occur in traditional district court. This provision would allow an underrepresented inventor maintaining possession of her patent to receive contingency fee representation, while still achieving the end result of determining patent validity. This also serves to protect against the threat of bad actors who are said to buy up patents and file frivolous lawsuits, as these supposed bad actors are not the original inventors listed on the face of the patents they potentially might buy. Furthermore, in accordance with the proposed venue reform regarding where research was conducted, claims for declaratory judgement

³⁰ <https://www.congress.gov/bill/114th-congress/senate-bill/2733/>

relating to an inventor-owned patent should also be limited to the district where the inventor is domiciled or has consented to jurisdiction.

6. **Restore Constitutional Exclusivity.** Article I, Section 8, Clause 8 of the U.S. Constitution gives Congress the sole power to “promote the Progress of Science and the Useful Arts, by securing for limited times to Authors and Inventors *the exclusive Right* to their respective Writings and Discoveries.”³¹ However, in *eBay*, the Supreme Court elected that it could decide what promotes the progress of science and the useful arts, and in doing so, it fundamentally changed the constitutional exclusive right bestowed upon an inventor by the grant of a letters patent to where a patent holder can be forced to license her invention, which is equivalent to her losing the right to exclude others. This represents a real challenge for the underrepresented inventor if she wants to compete in the market. If Congress wants to provide equal outcome for underrepresented inventors in the competitive market with more financially-abled businesses, Congress must enact a provision that includes the right to injunctive relief for patent holders upon a finding of infringement, providing underrepresented inventors true ownership and exclusive rights over their disclosed inventions.
7. **Abolish Retroactive Application of the AIA.** The Supreme Court in *Oil States* opted not to address retroactive application of IPRs on patents having priority dates that predate the AIA; nevertheless, the AIA provides that the USPTO can unconstitutionally take a patent away from a patent holder by instituting an IPR on said patent. Moreover, such a taking by the Patent Office from inventors who disclosed their inventions prior to the AIA and who did not subject themselves to the provisions of its title is unjust, violates due process, and destroys any confidence in the social compact between inventors and the government, because, at any time, the government can change a legal contract *ex post facto*. Congress must restore integrity and confidence in the U.S. patent system. Abolishing retroactive application of the AIA on patents having priority dates that predate the law would restore confidence held by the underrepresented inventor in her government and in the social compact patent bargain with the people, without fear that the government can unfairly change the rules in the middle of the game on a patent bargain already entered.

The legislative recommendations above will restore reliability for the underrepresented inventor in seeking a U.S. patent grant. These recommendations will provide her both a new and restored incentive to seek patent protection for her inventions, thus receiving the protection she needs to engage in entrepreneurship and the American and global innovative economy.

³¹ U.S. CONST. art. I, § 8, cl. 8 (emphasis added).

VI. Federal Register Notice Questions

As part of the Federal Register Notice³², the Director provided questions as a preliminary guide to aid the USPTO in collecting relevant information and to evaluate possible administrative or legislative recommendations that may be provided to Congress. The Federal Register notice stated that comments from the public on any issues that they believe are relevant to the scope of the study are welcome, but the USPTO was particularly interested in answers to the questions in the Notice. I have provided my answers to selected questions in Attachment 3.

VII. Conclusion

This testimony has shown that in order to provide equal opportunity to underrepresented classes in entrepreneurship and invention, the government stands to benefit in this quest by supporting and replicating educational programs such as the Young Inventors Showcase nationwide, fostering innovation among today's youth and their families; allowing veterans to participate in the patent system with reduced fees; and encouraging those seeking U.S. residency and/or citizenship to bring their ideas to be protected in the United States and be rewarded with waiting time advantages. Furthermore, in order to provide an incentive to those underrepresented classes pursuing equal opportunity when filing for and obtaining patents, Congress must ensure there is equal outcome in lieu of the ability for the underrepresented patent holder to be able to rely upon and defend her granted patent rights. Policy that will restore representation to inventors, reliability in their patent grants, a convenient venue for enforcement by inventors, and exclusive rights as stated in the Constitution, will bring the necessary incentive and encourage those underrepresented groups seeking to protect their intellectual property. Only by coupling equal outcome with equal opportunity in such a two-pronged approach can the United States fully harness the maximum innovative potential of its people and continue to promote U.S.-based leadership in the global innovation economy.

Both the USPTO and Congress should be commended on their dedicated attention to this issue of underrepresentation, and the USPTO especially should be commended for involving the public as stakeholders in their required study pursuant to the SUCCESS Act. Concurring with Representative Martha Roby's statement made during the March 27, 2019 House Judiciary Committee "Lost Einsteins" Hearing,

³² 84 FR 17809 (2019).

I too look forward to viewing the USPTO's report on the results of the study conducted by the USPTO pursuant to this SUCCESS Act.

It is my hope that the USPTO finds this testimony useful in its report to Congress. Given that it is the sense of Congress that the United States has the responsibility to work with the private sector to close the gap in the number of patents applied for and obtained by women and minorities, I look forward to continuing the conversation and/or engaging with the USPTO to that end.

ATTACHMENT 1

TO

Written Testimony of

JEFF HARDIN & PATRICIA DURAN

Before the

UNITED STATES PATENT & TRADEMARK OFFICE

(USPTO)

Pursuant to the

Study of Underrepresented Classes

Chasing Engineering and Science Success

(SUCCESS) Act of 2018

Submitted on

June 30, 2019

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JUDICIARY

SUBCOMMITTEES:
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IMMIGRATION AND BORDER SECURITY

HOMELAND SECURITY

SUBCOMMITTEES:

RANKING MEMBER
BORDER AND MARITIME SECURITY
TRANSPORTATION SECURITY

SENIOR WHIP
DEMOCRATIC CAUCUS

CONGRESSWOMAN SHEILA JACKSON LEE OF TEXAS
QUESTIONS FOR THE RECORD FOLLOWING HOUSE
JUDICIARY SUBCOMMITTEE ON IP:
OVERSIGHT OF THE U.S.P.T.O
MEETING HELD: MAY 9, 2016
QUESTIONS SUBMITTED: MAY 16, 2019

As required by the 2018 Study of Underrepresented Classes Chasing Engineering and Science (SUCCESS) Act, the USPTO is to prepare a study on the participation of women, minorities, and veterans in entrepreneurship activities and the patent system. Section 3 of the SUCCESS Act requires the study to provide legislative recommendations for how to increase the number of women, minorities, and veterans who apply for and obtain patents. To assist in gathering information prior to compiling the report, the USPTO has invited the public to provide written comments and also oral testimony at one of three hearings.

1. Have stakeholders who have provided testimony believe that the underrepresented classes only consist of those who are considered women, minorities, or veterans, or have any of the stakeholders identified any other people(s) as being underrepresented? In the case of the latter, who else, or what other group(s) of people, have the stakeholders identified as being underrepresented?
2. Have stakeholders expressed concern regarding the underrepresented classes' financial ability to enforce their rights once they do obtain patents? What legislative recommendations has the USPTO received from

stakeholders that would increase the incentive for underrepresented classes to apply for and obtain more patents, and does equal outcome with respect to a patent holder's financial ability to enforce their rights against well-funded companies play a part?

3. The PTAB/IPRs are purported to being a cheaper and faster alternative than district court litigation in achieving the end result of determining patent validity/eligibility. Given that contingency law firms rely on damages to recoup their investment, and in the case of the PTAB, there is no monetary compensation for prevailing patent holders, have stakeholders expressed concern whether the underrepresented classes have the financial means to receive legal representation? What legislative recommendations has the USPTO received from stakeholders that would help the underrepresented classes avoid such a financial burden while still achieving the end result of determining patent validity/eligibility?

4. What legislative recommendations has the USPTO received from stakeholders that would help underrepresented classes apply for and obtain more patents in lieu of patent eligibility?

ATTACHMENT 2

TO

Written Testimony of

JEFF HARDIN & PATRICIA DURAN

Before the

UNITED STATES PATENT & TRADEMARK OFFICE

(USPTO)

Pursuant to the

Study of Underrepresented Classes

Chasing Engineering and Science Success

(SUCCESS) Act of 2018

Submitted on

June 30, 2019

SUCCESS Act: Oral Public Testimony at First Public Hearing

Patricia Duran

“The True Underrepresented Class”

(This testimony below was delivered by Patricia Duran in Spanish, with Jeff Hardin providing the English translation.)

My name is Patricia Duran. Thank you for the opportunity to allow me to comment with you here today.

I am a woman, and I am considered a minority in this country. I appreciate the intent behind the SUCCESS Act for Congress to ask for legislative recommendations for how to increase the number of women, minorities, and veterans who apply for and obtain patents, but I must start with this question:

What good is a patent if one cannot feasibly defend it?

Regarding this SUCCESS Act, I am certain you will hear this theme from all independent inventors, who are the true stakeholders in the patent system and the true source of American innovation. The theme is this:

Women, minorities, and veterans all reside in the same category with all the other independent inventors, and this class – the *independent inventors – this is the true underrepresented class.*

And here’s why. Women, minorities, and veterans, once they receive a patent, are actually in the same predicament as all independent inventors and small businesses. With the current state of patent law in the United States, independent inventors and small businesses cannot adequately license the patents they receive with larger, financially-abled entities – the “represented” class – nor can they enforce their patents against this class when their patents are stolen. This is because this represented class can simply bleed the underrepresented class dry legally and financially by taking advantage of today’s current patent laws.

So, although pursuing equal opportunity with women, minorities, and veterans in obtaining a patent is a valuable effort, if it does not coincide with equal outcome in one’s ability to utilize the patent once received, regardless of the person’s financial state, telling women, minorities, and veterans that they stand to benefit from a patent will simply be false doctrine.

Now that I have provided the above clarification, I will tell you a chapter in the story of my life.

I am a cancer survivor. I was diagnosed with breast cancer three months after my daughter was born. I am almost three years into my fight. After being diagnosed, I received a double mastectomy, and because the biopsy taken prior to my surgery of the suspicious lymph node adjacent to my tumor turned out to be negative, I was to receive simultaneous reconstruction during the mastectomy. Two birds with one stone. But as it turned out, my diagnosis was incorrect. A second biopsy of my lymph nodes was performed during the surgery, and it revealed that my lymph nodes in fact had been compromised.

The result was irreversible torture, and I had to relive this multiple times. During this double surgery attempt, my mastectomy had already been completed, and my plastic surgeon was already midway into his reconstructive procedure, using fatty tissue from my abdomen to reconstruct my breasts. Because my lymph nodes were discovered as compromised, he had to suspend his work, leaving me with a diamond-shaped incision going from hip to hip and plastic silicon sheets were to remain in my abdomen until I had undergone and

SUCCESS Act: Oral Public Testimony at First Public Hearing
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“The True Underrepresented Class”

recovered from full chemotherapy and radiation therapy. Then I would have to come back and undergo surgery again to complete the rest of the procedure.

What was the end result in that follow up procedure one year later? I had complications and my reconstruction failed 3 times. I have not only endured and continue to suffer physical pain as a result of these surgeries, but I also endure psychological pain every day when I look in the mirror as a reminder. My scars remind me of the battle I fight, but every day I have is a gift. My blessing is that I am alive, and I have two beautiful children and a loving husband.

So how does my story relate to patents? Well, given that I endured misdiagnosis, the fact that medical diagnosis methods can be considered patent ineligible is concerning. The cure of cancer today is merely playing a game of statistics – crossing my fingers hoping that I fall within the percentage of people who survive in studied patient populations and clinical trials. The chemotherapies I received were a result of a strong patent system, but is there something better? For example, can more work be done in immunotherapies and other discoveries? Or, as Sherry Knowles, who is also a breast cancer survivor, has questioned: are discoveries now being thrown out? The Constitution includes discoveries, and so does the Patent Statute. Jeff will speak more on these, but this is my testimony, and I thank you for giving me the opportunity to share my comments with you here today.

SUCCESS Act: Oral Public Testimony at First Public Hearing

Patricia Duran

“The True Underrepresented Class”

(This Spanish testimony below was delivered by Patricia Duran, with Jeff Hardin reciting the English translation.)

Mi nombre es Patricia Duran. Gracias por la oportunidad de permitirme estar aquí hoy con ustedes y escucharme.

Soy mujer y soy considerada una minoría en este país. Y quiero agradecer la intención de THE SUCCESS ACT que emite el Congreso en solicitar recomendaciones legislativas que contribuyan la fomentación del número de mujeres, minorías y veteranos que solicitan y obtienen patentes, pero debo empezar con esta pregunta:

¿De qué sirve tener una patente si no la puedes defender?

Con respecto a esta ley de THE SUCCESS ACT, estoy seguro de que escucharemos este tema de todos los inventores independientes quienes son los verdaderos interesados en el sistema de patentes y quienes son el verdadero origen de la innovación norteamericana. El tema es este:

Las mujeres, las minorías y los veteranos están dentro de la misma categoría con todos los demás inventores independientes, y esta clase - los inventores independientes - *es la verdadera clase subrepresentada.*

La razón es porque las mujeres, la minoría y los veteranos, una vez que reciben una patente están realmente en el mismo aprieto económico que todos los inventores independientes y las pequeñas empresas. Con el estado actual de la legislación en materia de patentes en los Estados Unidos, los inventores independientes y las pequeñas empresas se ven en la incapacidad de licenciar adecuadamente las patentes que reciben, con entidades grandes y de mayores capacidades financieras – que representan la clase “representada” - ni pueden hacer valer sus patentes contra Esta clase cuando se roban sus patentes. Esto se debe a que la clase representada puede simplemente abusar gradualmente de todos los recursos legales y financieros sobre la clase subrepresentada y así con conllevándole a la extinción utilizando a las leyes actuales de patentes de hoy en día.

Por lo tanto, aunque perseguir la igualdad de oportunidades que las mujeres, la minoría y los veteranos en la obtención de una patente es un esfuerzo valioso, si no coincide con el mismo resultado en la capacidad de utilizar la patente una vez recibida, independientemente del estado financiero de la persona, decir que las mujeres, las minorías y los veteranos que pueden beneficiarse de una patente simplemente será una doctrina falsa.

Después de haberles aportados la aclaración anterior; deseo contarles un capítulo de la historia de mi vida.

Soy sobreviviente de Cáncer. Fui diagnosticada con cáncer de mama 3 meses después de nacer mi hija. Estoy casi tres años en mi lucha. A causa de este diagnóstico tuve que realizar una mastectomía doble lo cual fue planeada con una reconstrucción simultánea debido a que previa a la cirugía el ganglio linfático que presentaba características sospechosas adyacente al tumor fue biopsia y su resultado fue negativo. El plan fue matar 2 pájaros con un solo tiro. Pero ese diagnóstico fue incorrecto, una segunda biopsia de los ganglios linfáticos durante la cirugía reveló que estos estaban comprometidos.

SUCCESS Act: Oral Public Testimony at First Public Hearing
Patricia Duran
“The True Underrepresented Class”

El resultado fue una pura tortura irreversible y que luego tendría que volver a repetir. Durante este intento de doble cirugía, mi mastectomía ya se había completado, y mi cirujano plástico ya había avanzado su trabajo en su procedimiento reconstructivo usando tejido graso de mi abdomen para reconstruir mis senos. Pero el hallazgo de que algunos ganglios linfáticos sí estaban comprometidos conllevó a que la reconstrucción se suspendiera dejándome con una incisión en forma de diamante en la cadera cruzando de un extremo a otro, y dejando dentro unas hojas de silicona de plástico que permanecieran en mi abdomen hasta que el tratamiento de quimioterapias y radioterapias se completara para luego proceder con la reconstrucción nuevamente.

Entonces el resultado final al procedimiento reconstructivo de seguimiento fue que tuve ciertas complicaciones y la reconstrucción falló 3 veces. Batallo con el sufrimiento de tener diferentes dolores físicos como resultado de estas cirugías, pero también sufro dolor psicológico todos los días cuando me miro en el espejo. Sin embargo, estas marcas son de luchas ganadas en la batalla que estoy peleando, donde cada día no es un día más, es un regalo como las bendiciones de que Estoy viva, tengo dos hermosos hijos y un esposo amoroso.

Entonces como mi experiencia se relaciona con el tema de las patentes, dado que he sido afectada por un diagnóstico erróneo, el hecho de que los métodos de diagnóstico médico puedan considerarse inadmisibles en materia de patentes es preocupante. Y la cura del cáncer es un sorteo que en la que las estadísticas nos dan un número de probabilidades donde yo cruzo mis dedos con la esperanza de quedarme dentro del porcentaje de personas que sobreviven en las poblaciones de pacientes estudiados y ensayos clínicos. Las quimioterapias que recibí fueron el resultado de un fuerte sistema de patentes, pero ¿hay algo mejor? Por ejemplo, ¿se puede hacer más trabajo en inmunoterapias y otros descubrimientos? O, como Sherry Knowles, que también es sobreviviente del cáncer de mama, ha cuestionado: ¿ahora se están desechando los descubrimientos? La Constitución incluye los descubrimientos, y también lo hace el estatuto de la patente. Jeff hablará más sobre estos, pero este es mi testimonio, y les agradezco por haberme dado la oportunidad de compartir mis comentarios con ustedes aquí hoy.

ATTACHMENT 3

TO

Written Testimony of

JEFF HARDIN & PATRICIA DURAN

Before the

UNITED STATES PATENT & TRADEMARK OFFICE

(USPTO)

Pursuant to the

Study of Underrepresented Classes

Chasing Engineering and Science Success

(SUCCESS) Act of 2018

Submitted on

June 30, 2019

Federal Register Notice Questions

(1) What public data are available to identify the number of patents applied for and obtained by women, minorities and veterans?

Regarding the number of women, the USPTO used particular methodology to reach conclusions as described in Appendix II in the February 2019 report "Progress and Potential: A profile of women inventors on U.S. patents". Although not definitive, the methodology did exhibit a level of confidence in its analysis. An analysis of minorities and veterans might be harder to identify. Moreover, what is the definition of a "minority", and how is it relevant? My wife is considered a minority. Does that mean my children are?

(2) What public data are available to assess the social and private benefits that result from increasing the number of patents applied for and obtained by women, minorities, and veterans, as well as small businesses owned by these groups?

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(3) What social and private benefits would you identify as resulting from increasing the number of patents applied for and obtained by women, minorities, and veterans?

Unfortunately, because of the current state of the U.S. patent system, I honestly find it difficult to recommend that women, minorities, and veterans—or any independent inventor or small business for that matter—seek to apply for and obtain a U.S. patent. The benefit of protection that a patent once provided to an inventor has lost its reliance. This in part is because larger, financially-abled companies can partake in the strategy of efficient infringement on an underrepresented inventor's disclosed invention and bleed her dry legally and financially until she doesn't have the resources to continue to try to defend her patent.

(4) What social and private benefits to small businesses owned by women, minorities, and veterans would you identify as resulting from increasing the number of patents applied for and obtained by those businesses?

Unfortunately, because of the current state of the U.S. patent system, I honestly find it difficult to recommend that any small business—whether owned by women, minorities, veterans, or any independent inventor for that matter—seek to apply for and obtain a U.S. patent. The benefit of protection that a patent once provided to a small business has lost its reliance. This in part is because larger, financially-abled companies can partake in the strategy of efficient infringement on a small business's disclosed invention and bleed it dry legally and financially until it doesn't have the resources to continue to try to defend its patent.

(5) Should the USPTO collect demographic information on patent inventors at the time of patent application, and why?

No. The patent system is a meritocracy. It goes without saying, an examiner of a patent application cares *not* of the gender, age, race, or otherwise of the applicant or inventor when examining the merits, as a patent is based solely on the merits of the claims, and nothing more.

If the USPTO desires to collect demographic information, providing this information should be voluntary for inventors, and should only be collected *after* the application has either been granted or abandoned, but definitely not before or during the application process, lest the application or the examination process run the risk of becoming tainted. E.g., what if someone at the Patent Office decides to use the demographic information to discriminate?

I elect for not allowing any form of bias to creep into an otherwise blind yet meritorious process.

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(6) To what extent, if at all, do educational and professional circumstances affect the ability of women, minorities, and veterans to apply for and obtain patents or to pursue entrepreneurial activities?

See answer in (7) below.

(7) To what extent, if at all, do socioeconomic factors facilitate or hinder the ability of women, minorities, and veterans to apply for and obtain patents or to pursue entrepreneurial activities?

Educational, professional, and socioeconomic factors do affect the ability to apply for and obtain a patent, not just women, minorities, and veterans, but for anyone applying. This comes from understanding Maslow's Hierarchy of Needs, which entails a pyramid for the different levels of personal development. This explains that only when one reaches the highest level in the pyramid will one's genius begin to flourish. Now, do realize that this does *not* solve the problem that today's system does not have equal outcome, but this will at least help solve the problem of equal opportunity.

Maslow's Hierarchy of Needs explains a personal development pyramid containing five levels. Starting from the bottom and going up, there's

- physiological (food, water, shelter)
- safety needs (personal, emotional, and financial security)
- social and moral belonging (intimate relationships, friends, family, church, sports)
- self-esteem (feeling of accomplishment, confidence in one's abilities)
- self-actualization (utilizing abilities and talents. understanding and pursuing goals: creating or even inventing)

Each lower level must be satisfied within an individual in order for one to be motivated to pursue the next level. Because if one doesn't have food to eat, then one is not going to engage in becoming an entrepreneur or pursuing a patent. That's just not on their mind.

Only until someone has all lower levels satisfied can they begin freely pursuing goals, creating, and inventing, so only then will you begin to see the genius flourish. Unfortunately, once those who reach this level will become educated on the state of today's patent system, and they will understand today's patent landscape is largely defined by unequal outcome, which might tend to discourage their participation on patenting as they look for other methods of receiving protection, such as trade secrets.

(8) What entities or institutions, if any, should or should not play an active role in promoting the participation of women, minorities, and veterans in the patent system and entrepreneurial activities?

For me, I had the privilege of having an established network – the third prong “social and moral belonging” in Maslow's hierarchy. That did not occur because of my gender or my race. That was because I knew a friend. When I had an idea for my first invention, I reached out to a friend who was in law school. He connected me with a patent attorney who had gone out on his own and would likely file my patent application at a deep discount, which he did. Again, I am in the underrepresented class, and this is what worked for me.

In my written testimony, I describe the Young Inventors Showcase, and it plays an active role in promoting the participation of all youth and their families in the patent system and entrepreneurial activities. I do believe programs like this should continue to play an active role, and this type of program creates a natural diversity engine.

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(9) What public policies, if any, should the Federal Government explore in order to promote the participation of women, minorities, and veterans in the patent system and entrepreneurial activities? Are there any public policies that the Federal Government should not explore?

The government (Congress) needs to correct the imbalance in equal outcome for the patent holder. The value of a patent should not depend on the financial resources of the entity who possesses ownership of the patent.

In my written testimony, I outline seven legislative recommendations that the Federal Government should explore that would promote the participation of the underrepresented in the patent system and entrepreneurial activities.

Public policies that the Federal Government should *not* explore include policies that focus on the post grant review proceedings. Post grant review is an experiment that Congress should end. Rather, any focus on bringing additional reliance to issued patents should be during the initial examination phase, *prior to* when a patent is issued. Bringing into question the patent grant that is issued by the USPTO only serves as a detriment to investment, and thus serves as a risk, rather than an asset, for a patent holder. An underrepresented inventor's biggest fear today is being dragged into a post grant review proceeding, where the cost to defend a patent cannot be arranged on a contingency basis. This cost is on the inventor's dime, and being dragged into this proceeding is not due to any fault by the inventor. The patent has already been vetted by experts in the field, so the inventor should receive quiet title, or at least the same level of reliance that existed for a patent prior to when the America Invents Act went into effect, where patent validity challenges occurred in district court, and an underrepresented inventor could be assured of contingency fee representation.

(10) What action could USPTO take to address the participation of women, minorities, and veterans in the patent system and entrepreneurial activities?

In my written testimony, I outline seven legislative recommendations that the Federal Government should explore that would promote the participation of the underrepresented in the patent system and entrepreneurial activities. The USPTO should share these recommendations with Congress. Furthermore, the USPTO should learn more about programs like the Young Inventors Showcase, while working strategically with, and sponsoring, such programs, so they may be rolled out nationwide.

(11) Are there policies, programs, or other targeted activities shown to be effective at recruiting and retaining women, minorities, and veterans in innovative and entrepreneurial activities? Are there policies, programs, or other targeted activities that have proved ineffective?

In my written testimony, I explain the Young Inventors Showcase. This is such a program shown to be effective at recruiting and retaining all peoples in innovative and entrepreneurial activities. I provide a demographic sampling of this year's elected winners as proof of its effectiveness.